

CHEMICALS, THE ENVIRONMENT, AND YOU: EXPLORATIONS IN SCIENCE AND HUMAN HEALTH

Nevada Science Academic Standards: Grades 6 – 8

Lesson	Standard	Objective
2, 3, 4	N.8.A.1	Students know how to identify and critically evaluate information in data, tables, and graphs.
1, 3, 4, 5, 6	N.8.A.2	Students know how to critically evaluate information to distinguish between fact and opinion.
2, 4, 5, 6	N.8.A.3	Students know different explanations can be given for the same evidence.
2, 4	N.8.A.4	Students know how to design and conduct a controlled experiment.
2, 3, 4	N.8.A.5	Students know how to use appropriate technology and laboratory procedures safely for observing, measuring, recording, and analyzing data.
2, 3, 4, 5, 6	N.8.A.6	Students know scientific inquiry includes evaluating results of scientific investigations, experiments, observations, theoretical and mathematical models, and explanations proposed by other scientists.
1, 5, 6	N.8.A.7	Students know there are multiple methods for organizing items and information.
1, 5, 6	N.8.B.1	Students understand that consequences of technologies can cause resource depletion and environmental degradation, but technology can also increase resource availability, mitigate environmental degradation, and make new resources economical.
1, 2, 3, 4, 5	N.8.B.3	Students know scientific knowledge is revised through a process of incorporating new evidence gained through on-going investigation and collaborative discussion.
1	P.8.A.2	Students know elements can be arranged in the periodic table which shows repeating patterns that group elements with similar properties.
2	L.8.B.2	Students know cells grow, divide, and take in nutrients which they use to provide energy for cell functions.
1, 4, 5	L.8.B.5	Students know disease can result from defects in body systems or from damage caused by infection.
1, 2, 5, 6	L.8.C.3	Students will evaluate how changes in environments can be beneficial or harmful.

Nevada Mathematics Academic Standards: Grades 6 – 8

Mathematics Process Standards

Lesson	Standard	Objective
2, 3, 4	A.1	Generalize solutions and apply previous knowledge to new problem solving situations.
2, 3, 4	A.2	Determine an efficient strategy, verify, interpret, and evaluate the results with respect to the original problem.
2, 3, 4	A.5	Identify necessary and extraneous information.
4	A.7	Apply technology as a tool in problem solving situations.

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2, 3, 4	A.8	Apply combinations of proven strategies and previous knowledge to solve non-routine problems.
2, 4	B.1	Use formulas, algorithms, inquiry, and other techniques to solve mathematical problems.
2, 3, 4	B.4	Model and explain mathematical relationships using oral, written, graphic, and algebraic methods.
2, 3, 4	B.5	Use everyday language, both orally and in writing, to communicate strategies and solutions to mathematical problems.
2, 3, 4	D.4	Apply mathematical thinking and modeling to solve problems that arise in other disciplines, such as rhythm in music and motion in science.
2, 3, 4	D.5	Identify, explain, and apply mathematics in everyday life.
Grade 6		
4	1.6.2.b	Multiply and divide with fractions using models, drawings, and numbers.
2, 4	1.6.2.c	Use models to translate among fractions, decimals, and percents.
2	1.6.5	Identify equivalent expressions between and among fractions, decimals, and percents.
2	1.6.6	Estimate using fractions, decimals, and percents.
2, 4	1.6.7	Calculate using fractions, decimals, and percents in mathematical and practical situations.
4	2.6.2	Evaluate formulas and algebraic expressions using whole number values.
4	3.6.1	Estimate and compare corresponding units of measure for temperature, length, and weight/mass between customary and metric systems.
2, 4	5.6.1.a	Pose questions that guide the collection of data.
3, 4	5.6.1.b	Organize and represent data using a variety of graphical representations including circle graphs and scatter plots.
3	5.6.3	Analyze the effect a change of graph type has on the interpretation of a set of data.
3	5.6.6	Analyze various representations of a set of data to draw conclusions and make predictions.
Grade 7		
2	1.7.2	Translate among fractions, decimals, and percents, including fractional percents.
4	1.7.6	Generate a reasonable estimate for a computation using a variety of methods.
2, 4	1.7.7	Calculate with integers and other rational numbers to solve mathematical and practical situations.
3	2.7.1	Use and create tables, charts, and graphs to extend a pattern in order to describe a linear rule, including integer values.
4	2.7.2	Evaluate formulas and algebraic expressions for given integer values.
4	3.7.1	Estimate and compare corresponding units of measure for area and volume/capacity between customary and metric systems.
2, 4	5.7.1.a	Formulate questions that guide the collection of data.
2, 3, 4	5.7.1.b	Organize, display, and read data using the appropriate graphical representations (with and without technology).
3	5.7.6	Interpolate and extrapolate from data to make predictions for a given set of data.

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Grade 8		
2	1.8.2.a	Translate among fractions, decimals, and percents, including percents greater than 100 and percents less than 1.
2, 4	1.8.2.b	Explain and use the relationship among equivalent representations of rational numbers in mathematical and practical situations.
4	1.8.2	Use estimation strategies to determine the reasonableness of an answer in mathematical and practical situations.
2, 4	1.8.7	Calculate with real numbers to solve mathematical and practical situations.
4	2.8.2	Evaluate formulas and algebraic expressions using rational numbers (with and without technology).
2, 4	5.8.1.a	Formulate questions and design a study that guides the collection of data.
2, 3, 4	5.8.1.b	Organize, display, and read data including box and whisker plots (with and without technology).
3	5.8.6	Formulate reasonable inferences and predictions through interpolation and extrapolation of data to solve practical problems.
Nevada English Language Arts Academic Standards: Grades 6 – 8		
Grade 6		
Lesson	Standard	Objective
1, 2, 4, 5, 6	1.6.3	Identify and use the meanings of high frequency Greek- and Latin-derived roots and affixes to determine the meanings of words.
1, 2, 4, 5, 6	2.6.1	Develop a plan for reading that includes the determination of purpose, appropriate rate for fiction vs. nonfiction, and related graphic organizers.
1, 2, 4, 5, 6	2.6.3	Identify and explain the relationships between main ideas and supporting details in text.
	4.6.1	Identify and use text features such as newspapers, magazines, and editorial to gain meaning.
1, 2, 4, 6	4.6.6	Read and follow multi-step directions to complete a complex task.
1, 2, 4, 5, 6	5.6.1	Write informative papers that develop a clear topic with appropriate facts, details, and examples from a variety of sources and have a distinct beginning, middle, and ending.
1, 2, 4, 5, 6	6.6.2	Use organizing techniques appropriate to the purpose for writing.
1, 2, 4, 5, 6	6.6.3	Write paragraphs and compositions with clear transitions between ideas.
1, 2, 4, 5, 6	6.6.6	Produce writing with a voice that shows awareness of an intended audience and purpose.
1, 2, 4, 5, 6	7.6.5	Spell frequently misspelled words correctly (e.g., their/they're/there and you're/your).
1, 2, 4, 6	8.6.4	Follow multi-step oral directions to complete a task.
All lessons	9.6.1	Use specific and varied vocabulary and apply standard English to communicate ideas.
2, 4	9.6.5	Give clear and concise multi-step directions to complete a complex task.
All lessons	10.6.1	Demonstrate active listening skills by participating in conversations and group discussions.

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All lessons	10.6.2	Ask and answer questions to generate possible solutions to a problem.
1, 4, 5, 6	10.6.4	Evaluate the logic and effectiveness of a speaker's argument(s).
2, 4, 6	11.6.1	Formulate a plan for research to answer a focused question.
All lessons	11.6.4	Record information using note-taking and organizational formats.
Grade 7		
1, 2, 4, 5, 6	1.7.3	Apply Greek- and Latin-derived roots and affixes to determine the meaning of unknown words.
1, 2, 4, 5, 6	2.7.1	Determine techniques for building background knowledge to aid comprehension.
1, 2, 4, 5, 6	2.7.3	Make inferences from text to aid comprehension.
1, 2, 4, 5, 6	4.7.3	Paraphrase and synthesize information from several sources to demonstrate comprehension.
1, 2, 4, 6	4.7.6	Read and follow multi-step directions to complete a complex task.
1, 2, 4, 5, 6	5.7.1	Write informative papers that have a structured beginning, middle, and conclusion and draw upon a variety of sources.
3	5.7.2	Convert text into visual formats, such as charts and graphs for a specific audience and purpose.
2, 3, 4	5.7.5	Write summaries of procedures such as a science lab experiment or an explanation of how to solve a math problem.
1, 2, 4, 5, 6	6.7.2	Select and use organizing techniques appropriate to the purpose for writing.
1, 2, 4, 5, 6	6.7.3	Write compositions that focus on a main topic supported by relevant examples, anecdotes, and/or details.
1, 2, 4, 5, 6	6.7.6	Produce writing with a voice that addresses an intended audience and purpose.
1, 2, 4, 5, 6	7.7.5	Demonstrate conventional spelling.
1, 2, 4, 6	8.7.4	Follow multi-step oral directions to complete a task.
All lessons	9.7.1	Use specific and varied vocabulary and apply standard English to communicate ideas.
2, 4	9.7.5	Give clear and concise multi-step directions to complete a complex task.
All lessons	10.7.1	Provide constructive feedback when participating in conversations and group discussions.
All lessons	10.7.2	Distinguish between relevant and irrelevant information offered in support of an opinion.
All lessons	10.7.4	Develop logical arguments in support of opinions.
2, 4, 6	11.7.1	Formulate questions and statements of purpose to guide cross-curricular research.
All lessons	11.7.4	Record information using a self-selected note-taking or organizational strategy.
Grade 8		
1, 2, 4, 5, 6	1.8.3	Apply knowledge of Greek- and Latin-derived roots and affixes to determine the meaning of unknown words and to increase vocabulary.
1, 2, 4, 5, 6	2.8.1	Apply and analyze the use of appropriate pre-reading strategies that enhance comprehension, such as accessing prior knowledge, predicting, previewing, and setting a purpose.
1, 2, 4, 5, 6	2.8.3	Apply and analyze a variety of skills and strategies such as locating essential information, verifying predictions, drawing

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		conclusions, and making inferences to aid comprehension.
1, 4, 5, 6	4.8.1 and 4.8.2	Use knowledge of text features and common expository structures such as cause/effect and comparison/contrast to comprehend text.
1, 2, 4, 5, 6	4.8.3	Locate, interpret, organize, and synthesize information from texts to answer specific questions and support ideas.
1, 2, 4, 6	4.8.6	Read and follow multi-step directions to complete a complex task.
1, 2, 4, 5, 6	5.8.1	Write informative papers that develop a topic with introductory and concluding statements and supporting ideas, examples, and details from a variety of sources.
3	5.8.2	Write career and workplace communications, such as business letters, resumes, or job applications and produce workplace communications such as memos, charts, and graphs.
1, 2, 4, 5, 6	5.8.5	Write summaries that present main ideas and key supporting information.
1, 2, 4, 5, 6	6.8.2	Use organizing techniques appropriate to the purpose for writing.
1, 2, 4, 5, 6	6.8.3	Write coherent compositions with a controlling impression or thesis statement.
1, 2, 4, 5, 6	6.8.6	Produce writing with a voice that is expressive and appropriate to audience and purpose.
1, 2, 4, 5, 6	7.8.5	Demonstrate conventional spelling.
1, 2, 4, 6	8.68.4	Follow multi-step oral directions to complete a task.
All lessons	9.8.1	Use specific and varied vocabulary and apply standard English to communicate ideas.
2, 4	9.8.5	Give clear and concise multi-step directions to complete a complex task.
All lessons	10.8.1	Participate in conversations and group discussions as active listeners who provide constructive feedback.
All lessons	10.8.2	Ask for and provide specific evidence in support of an opinion.
All lessons	10.8.4	Express supported opinions while considering divergent viewpoints.
2, 4, 6	11.8.1	Formulate questions and develop a clear statement of purpose that lead to inquiry, investigation, and research of cross-curricular topics.
All lessons	11.8.4	Record information using a variety of note-taking and organizational strategies.
Nevada Health Education Core Curriculum Standards: Grade 8		
Lesson	Standard	Objective
4	1.8.1	Explain the impact of personal health behaviors on the functioning of body systems.
4	1.8.6	Describe ways to reduce risk factors and increase resiliency related to adolescent health.
5	1.8.7	Identify laws and regulations made to protect the health of the community.
4	2.8.1	Differentiate health concerns as personal responsibility or professional responsibility.
4	2.8.2	Identify characteristics of scientifically valid health information.
1, 4, 5	4.8.2	Evaluate the impact of technology on health and disease prevention.

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4	4.8.3	Critique a variety of consumer influences that affect health decisions.
1, 5	6.8.2	Compare and contrast the short and long-term impact of health decisions on the individual and society.
1, 5	6.8.3	Determine contacts for assistance with health issues.